

PATENT
USSN 09/990,080
Docket 018/258c

CLAIM AMENDMENTS

1. *(Currently amended)* A protein, peptide, or peptide mimetic that inhibits human telomerase, which ~~either a)~~ has a sequence ~~comprising at least 10~~ consisting of at least 500 consecutive amino acids in SEQ. ID NO:2, or encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of DNA that hybridizes to a sequence complementary to SEQ. ID NO:1 at 5°C to 25°C below T_m in aqueous solution at 1 M NaCl.

wherein T_m is the melting temperature of double-stranded DNA having the sequence of SEQ. ID NO:1 under the same reaction conditions;

but which except that said protein, peptide, or peptide mimetic contains one or more deletions consisting each of which consists essentially of :

- a) residues 560-565,
- b) residues 930-934, or
- c) at least 10 consecutive amino acids from residues 323-450,
- d) at least 10 consecutive amino acids from residues 637-660,
- e) at least 10 consecutive amino acids from residues 748-766,
- f) at least 10 consecutive amino acids from residues 1055-1071, or
- g) at least 10 consecutive amino acids from residues 1084-1116

of SEQ. ID NO:2

~~+ or b) has a sequence consisting essentially of FFVTE (SEQ. ID NO:3); FVVT (SEQ. ID NO:6), or at least 10 consecutive amino acids from YGVLLKTHCPLRAA (SEQ. ID NO:4).~~

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2. *(Currently amended)*

~~The protein, peptide, or peptide mimetic of claim 1, which has a sequence comprising at least 10 consecutive amino acids in SEQ. ID NO:2, or encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of a sequence complementary to SEQ. ID NO:1; but which contains one or more deletions consisting essentially of residues 560-565, residues 930-934, or at least 10 consecutive amino acids from residues 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2~~

A protein, peptide, or peptide mimetic that inhibits human telomerase, which has a sequence consisting of at least 500 consecutive amino acids of SEQ. ID NO:2; except that it contains one or more deletions, each of which consists essentially of :

a) residues 560-565,

b) residues 930-934, or

c) at least 10 consecutive amino acids from residues 323-450,

d) at least 10 consecutive amino acids from residues 637-660,

e) at least 10 consecutive amino acids from residues 748-766,

f) at least 10 consecutive amino acids from residues 1055-1071, or

g) at least 10 consecutive amino acids from residues 1084-1116

of SEQ. ID NO:2.

3. *(Currently amended)* ~~The protein, peptide, or peptide mimetic of claim 2 claim 1, which has a sequence comprising at least 25 consecutive amino acids in SEQ. ID NO:2; but which contains one or more deletions consisting essentially of residues 560-565, 930-934, 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2.~~

4. *(Currently amended)* The protein, peptide, or peptide mimetic of claim 2, which ~~comprises~~ consists essentially of full-length human telomerase amino acid sequence, except for said deletion(s).

5. *(Original)* ~~The protein, peptide, or peptide mimetic of~~ A protein or peptide according to claim 2, which is a dominant negative mutant.

6. *(Currently amended)* The protein, peptide, or peptide mimetic of ~~claim 5 claim 2,~~ which binds human telomerase RNA component but lacks processive telomerase activity.

7. *(Currently amended)* The protein, peptide, or peptide mimetic of ~~claim 5 claim 2,~~ which binds human telomeres but lacks processive telomerase activity.

8. **CANCELLED**

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9. *(Currently amended)* ~~The peptide mimetic of claim 8~~ A peptide mimetic according to claim 13, wherein one or more linkages between consecutive amino acids in the mimetic is $-\text{CH}_2\text{NH}-$, $-\text{CH}_2\text{S}-$, $-\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{C}(=\text{O})\text{CH}_2-$, $-\text{CH}(\text{OH})\text{CH}_2-$, or $-\text{CH}_2\text{SO}-$.
10. *(Original)* A method of inhibiting telomerase catalytic activity, comprising introducing a protein, peptide, or peptide mimetic according to claim 1 into an environment containing telomerase reverse transcriptase.
11. *(Currently amended)* A method of inhibiting telomerase catalytic activity, comprising introducing a protein, peptide, or peptide mimetic according to claim 13 into an environment containing telomerase reverse transcriptase and telomerase RNA component ~~a means that inhibits binding of the transcriptase to the RNA component.~~
12. *(Original)* A method of inhibiting telomerase catalytic activity in a cell, comprising expressing in the cell a nucleic acid encoding a protein or peptide according to claim 2.
13. *(Currently amended)* A protein, peptide, or peptide mimetic that ~~is a dominant negative mutant of human telomerase reverse transcriptase having~~ has a means for inhibiting telomerase activity.
14. *(Currently amended)* The protein, peptide, or peptide mimetic of claim 13, which ~~comprises~~ has a means for binding telomerase RNA component, but which lacks telomerase catalytic activity.
15. *(Previously presented)* The protein, peptide, or peptide mimetic of claim 13, which lacks a means for binding telomerase RNA component.

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16. *(Currently amended)* The protein, peptide, or peptide mimetic of claim 14, wherein the telomerase inhibition means ~~comprises at least 10~~ consists of at least 500 consecutive amino acids in SEQ. ID NO:2, or encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of DNA that hybridizes to a sequence complementary to SEQ. ID NO:1 at 5°C to 25°C below T_m in aqueous solution at 1 M NaCl,
wherein T_m is the melting temperature of double-stranded DNA having the sequence of SEQ. ID NO:1 under the same reaction conditions;
~~but which except that said protein, peptide, or peptide mimetic contains one or more deletions consisting~~ , each of which consists essentially of :
a) residues 560-565,
b) residues 930-934, or
c) at least 10 consecutive amino acids from residues 323-450,
d) at least 10 consecutive amino acids from residues 637-660,
e) at least 10 consecutive amino acids from residues 748-766,
f) at least 10 consecutive amino acids from residues 1055-1071, or
g) at least 10 consecutive amino acids from residues 1084-1116
of SEQ. ID NO:2.
17. *(Currently amended)* The protein, peptide, or peptide mimetic ~~of claim 14, wherein the telomerase inhibition means comprises at least 25 consecutive amino acids in SEQ. ID NO:2, but of claim 16, wherein the telomerase inhibition means~~ contains one or more deletions consisting essentially of residues 560-565, residues 930-934, or ~~at least 10 consecutive amino acids from residues 323-450, 637-660, 748-766, 1055-1071, or 1084-1116 of SEQ. ID NO:2.~~
18. *(Withdrawn)* The protein, peptide, or peptide mimetic of claim 15, wherein the telomerase inhibition means has a sequence consisting essentially of FFYVTE (SEQ. ID NO:3).
19. *(Withdrawn)* The protein, peptide, or peptide mimetic of claim 15, wherein the telomerase inhibition means has a sequence consisting essentially of FYVT (SEQ. ID NO:5).
20. *(Withdrawn)* The protein, peptide, or peptide mimetic of claim 15, wherein the telomerase inhibition means has a sequence consisting essentially of at least 10 consecutive amino acids in YGVLLKTHCPLRAA (SEQ. ID NO:4).
21. *(New)* A method of inhibiting telomerase catalytic activity in a cell, comprising expressing in the cell a nucleic acid encoding a protein or peptide according to claim 13.

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